

## REMARKS

Claim 23 was rejected under 35 USC 112, first and second paragraph. This rejection is respectfully traversed.

The Examiner states, "The sealing means comprising NiNb is critical or essential to the practice of the invention, but not included in the claim(s)." Claim 23 now reads, "a sealing means comprising NiNb." Therefore, this rejection should be withdrawn.

Claims 5, 6 and 14-16 were rejected under 35 USC 112, second paragraph. This rejection is respectfully traversed and should be withdrawn in light of this Amendment.

Claims 5, 6, 14 and 15 have been canceled. The amendment of claim 16 is supported by the specification on page 12, lines 4 and 5.

Claims 2, 5, 6, 11, 14-16, 18 and 21-23 were rejected as being obvious over Ross '997 and Starcke in view of Taguchi. This rejection is respectfully traversed.

On page 7, lines 11-16, of the Action, the Examiner states:

it has been held that where claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established . . . .

This position of the Examiner is *not* the law. The Examiner is requested to refer to MPEP 2112, entitled "Requirements of Rejection Based on Inherency; Burden of Proof," for a clarification on the law on inherency. MPEP 2112 states, "**EXAMINER MUST PROVIDE RATIONALE OR EVIDENCE TENDING TO SHOW INHERENCY.**" [Emphasis in original.] Then, it states, "**ONCE A REFERENCE TEACHING PRODUCT APPEARING TO BE SUBSTANTIALLY IDENTICAL IS MADE THE BASIS OF A REFERENCE, AND THE EXAMINER PRESENTS EVIDENCE OR REASONING TENDING TO**

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**SHOW INHERENCY, THE BURDEN SHIFTS TO THE APPLICANTS TO SHOW AN UNOBVIOUS DIFFERENCE.”** [Emphasis in original.]

In short, the burden does NOT shift to Applicants until “**THE EXAMINER PRESENTS EVIDENCE OR REASONING TENDING TO SHOW INHERENCY**” (emphasis in original) as clearly stated in MPEP 2112. In this case, the Examiner has not provided any evidence or reasoning why the property recited in the functional limitation is inherently disclosed in the prior art references.

The Examiner states that “the burden of proof is shifted to applicant to show that prior art products do not necessarily or inherently possess characteristics of claimed products.” See page 7, line 15 and 16. There are two problems with this position of the Examiner.

First, the law requires that it is the Examiner who must first show, which the Examiner has failed to do in this case, that “the allegedly inherent characteristics necessarily flows from the teaching of the applied prior art.” *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)(emphasis in original). In fact, persons of ordinary skill in this art would have looked at Figure 5 of Ross ‘997 that shows the laser textured surface of NiNb layer and concluded that such a layer with bumps in them would *not* be capable of substantially preventing migration of Li from the substrate to the magnetic layer when the thickness of the NiNb layer is about 45 nm (450Å) or less as claimed. Ross ‘997 suggests the use of a NiNb layer with laser texturing and found that the bumps were “14 to 270 nm” (column 7, line 37) in height. Persons of ordinary skill in this art would also have recognized that the intense heat of laser texturing would have caused localized displacement of NiNb atoms, dislocations, grain boundary formation, imperfections or defects below the bumps, resulting in the formation of diffusion pathways for

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diffusion of atoms, ions and molecules.<sup>1</sup> Therefore, the laser textured NiNb layer of Ross '997 is likely to be highly permeable, and not work as a sealing layer of this invention. MPEP 2112 states, "The fact that a certain result or characteristic *may* occur or be present in the prior art is not sufficient to establish the inherency of the result or characteristic." [Citation omitted; emphasis in original.] Therefore, the alleged inherent characteristic does *not* necessarily flow the teaching of Ross '997.

Second, there is no prior art product that uses a NiNb sealing layer on a lithium-containing substrate —much less *directly* on a lithium-containing substrate— and the Examiner has not explained which prior art product should be evaluated. In fact, the examples of Ross '997 do not even show a NiNb layer directly on a glass substrate. Instead, the examples disclose a "25 nm Cr layer formed on a glass substrate." [Column 7, lines 51 and 52, of Ross '997.] Therefore, the Examiner is requiring Applicants to compare the properties of a hypothetical "prior art product" in which the NiNb layer is *directly* on a lithium-containing substrate as claimed.<sup>2</sup> This evaluation is not even possible by the combination of references, but is only possible by replicating a hypothetical "prior art product" to be the *same* as the claimed product. However, this requirement is impermissible as explained in MPEP 716.02(e) as follows:

Requiring applicant to compare claimed invention with polymer<sup>3</sup>  
suggested by the combination of references relied upon in the  
rejection of the claimed invention under 35 U.S.C. 103 "would be

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<sup>1</sup> "Diffusion in solids occurs by the relative displacement of atoms or molecules within the solid." *The Nature and Properties of Engineering Materials*, Z. D. Jastrzebski, 129 (1977)

<sup>2</sup> If the Examiner wants Applicants to evaluate a hypothetical "prior art product" in which the NiNb layer is not directly on a lithium-containing substrate, then the Examiner is impermissibly ignoring the term "directly" in the limitation "NiNb directly deposited on the ... substrate" in the claims.

<sup>3</sup> In the context of this application, the term "polymer" should be replaced with "a magnetic recording medium."

requiring comparison of the results of the invention with the results of the invention.” [Citing *In re Chapman*, 357 F.2d 418, 422, 148 USPQ 711, 714 (CCPA 1966).]

On page 8, paragraph 2, and throughout the Action, the Examiner seems to think that “it is known that NiP and NiNb sealing layers prevent migration of alkali (e.g. Li) ions” and cited Ross ‘997 and Starcke. Applicants respectfully submit that nowhere is it stated that NiP and NiNb sealing layers prevent the migration of lithium ions. Instead, Ross ‘997 states in column 3, lines 16-18, that “the glass substrate is essentially encapsulated by NiP, and Na and other impurities cannot reach and corrode the magnetic layer.” Na has an atomic number of 11 while Li has an atomic number of 3. Therefore, Na is a much larger atom than Li. Therefore, what could work as an encapsulating layer for Na would not necessarily work as an encapsulating layer for Li.

In column 2, lines 46-52, of Starcke, which is cited by the Examiner, Starcke states:

most glasses have alkaline metal ions present in their composition which may cause a corrosive effect known as salt bloom. This chemical phenomenon may additionally contribute to disk malfunction. Even after sputtering a magnetic layer, and wear layer, *the glass is not completely sealed and corrosion problems may occur.* [Emphasis added.]

In short, Applicants simply cannot understand where Ross ‘997 and Starcke support what the Examiner alleged on page 8, second paragraph of the Action, that they support. In the same paragraph, the Examiner equates NiP and NiNb sealing layers and states, “there is no evidence of the record showing that the disclosed prior art products do not necessarily possess the characteristics of the claimed product.” Applicants submit that there is evidence on the record that an NiNb sealing layer is superior to a NiP sealing layer. Please refer to the paragraph bridging pages 16 and 17 of the specification, which states:

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400 Å of NiP films deposited on Ohara glass-ceramic substrates failed peel-off test with Scotch tape. Ohara glass-ceramic substrates are commercially available from Ohara Incorporated of Kanagawa, Japan. 400Å of NiNb films deposited on Ohara glass-ceramic substrates did not fail the peel-off test with Scotch tape. *The adhesion of NiNb on glass is much better than that of NiP on glass.* [Emphasis added.]

The Examiner acknowledges that Ross '997 and Starcke "fail to disclose a glass substrate comprising Li." See page 8, lines 10 and 11 of the Action. The Examiner, therefore, relies on Taguchi for disclosing a glass substrate having Li. The Examiner states that the motivation to combine Ross '997 and Starcke with Taguchi would have been "to use a glass substrate comprising lithium as taught by Taguchi et al. in order [sic, in order] to produce a glass substrate for magnetic recording media which can be easily formed, polished and chemically strengthened." See last paragraph on page 8 of the Action.

However, there is a serious fallacy in the motivation provided by the Examiner for combining the cited references. This motivation is for *making* a glass disk substrate according to the glass composition of Taguchi, but *not for using* Taguchi's lithium-containing glass substrate instead of the non-lithium containing glass substrate of Ross '997 and Starcke. There is *no* suggestion or motivation in the cited references that one should substitute the non-lithium containing glass substrate of Ross '997 and Starcke with the lithium-containing glass substrate of Taguchi.

On the issue of combining references, the Federal Circuit in *In re Sang Su Lee*, 277 F.3d, 1338, 61 USPQ2d 1430 (Fed. Cir. 2002), specifically states, "The need for specificity pervades this authority ... [and] *particular findings* [not just any reason] *must* be made as to the reason the skilled artisan, with *no* knowledge of the claimed invention, would have selected these components for combination in the manner claimed." [Citations omitted; emphasis added.] As

explained above, and further in light of the decision in *In re Sang Su Lee*, Applicants submit that a *prima facie* case of obviousness has not been established.

Claims 3 and 12 were rejected as being obvious over Ross '997 in view of Starcke, Taguchi (RST) and Chen '370. Claims 8 and 17 were rejected as being obvious over RST and further in view of Okumura. Claims 9 and 19 were rejected as being obvious over RST in view of the disclosure on page 4, lines 3-10. These rejections have been respectfully traversed.

Chen '370 and Okumura do not fill the gaps in RST as explained above. Therefore, these rejections should fall along with the rejection of the claims over RST only. Applicants also submit that the use of the disclosure of this application without providing a motivation to combine the disclosure with other references to arrive at this invention, other than a motivation provided in the specification is inappropriate hindsight that should not be used against Applicants own invention.

New claims 24 and 25 specifically recite "wherein the substrate comprises about 10.5 to about 32 wt.% lithium oxide ( $\text{Li}_2\text{O}$ ).". Note that Taguchi only discloses "from 3 to 8.5% by weight if  $\text{Li}_2\text{O}$ " (column 3, lines 65 and 66), and further states, "When the content of  $\text{Li}_2\text{O}$  is more than 8.5% by weight, decreasing the theoretical optical basicity of the glass to 0.548 or less is difficult. *This causes decrease in the chemical durability and the migration resistance*, and there is the possibility that the magnetic film characteristics are adversely affected." [Column 4, lines 51-56.] In light of the above quoted disclosures from Taguchi, a person of ordinary skill would not have chosen  $\text{Li}_2\text{O}$  content to be in the range claimed in claims 24 and 25. The lower limit of "about 10.5 ... wt.%" in claims 24 and 25 is supported in line 5 from the bottom on page 14 of the specification. The lower limit of "about 10.5 ... wt.%" avoids the upper limit of 8.5 wt.% disclosed in Taguchi but still covers the range in between.

Claims 2, 3, 5, 6, 8, 9, 11, 12, 14, 15, 17, 18 and 21-23 were rejected for obviousness-type double patenting over claims 1-20 of Chen '890 (U.S. Pat. No. 6,120,890) in view of Ross '997. This rejection is respectfully traversed and should be withdrawn for the same deficiencies in Ross '997 that are explained above.

In light of the above, a Notice of Allowance is respectfully solicited.

Attached hereto is a marked-up version of the changes made to the claims by this amendment. The attached pages are captioned "Version with markings to show changes made."

In the event that the transmittal letter is separated from this document and the Patent and Trademark Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952, referencing docket number 14671-20004.00.

Respectfully submitted,

Dated: April 5, 2002

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